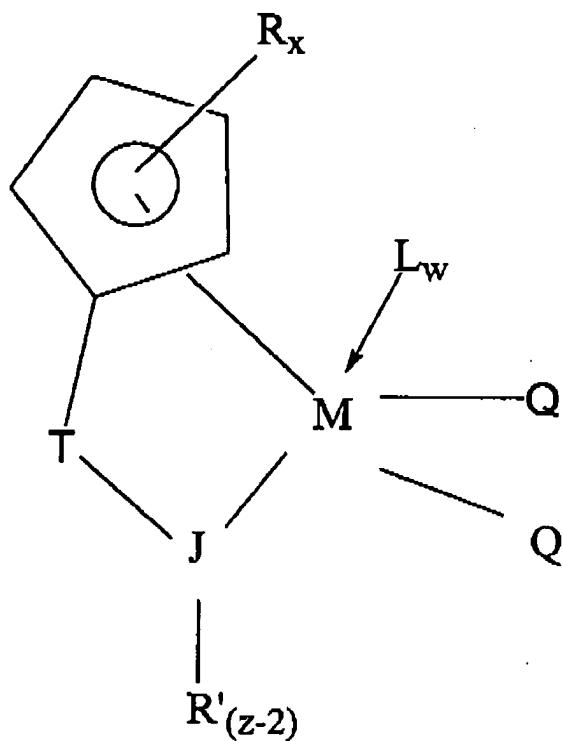


Claims

Claims 1-26 cancelled.

27. (Currently amended) A compound represented by the formula:



wherein M is Hf or Zr Ti in its highest formal oxidation state;

(C₅H_{4-x}R_x) is a cyclopentadienyl ring which is symmetrically substituted with two or four substituent groups R, with "x" denoting the degree of substitution (x = 2 or 4) and each R is, independently, a radical selected from a group consisting of C₁-C₂₀ hydrocarbyl radicals, substituted C₁-C₂₀ hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen radical, an amido radical, a phosphido radical, an alkoxy radical or any other radical containing a Lewis acidic or basic functionality, C₁-C₂₀ hydrocarbyl-substituted metalloid radicals wherein the metalloid is selected from the Group IV A of the Periodic Table of Elements, and halogen radicals, amido radicals,

phosphido radicals, alkoxy radicals, alkylborido radicals and radicals containing Lewis acidic or basic functionality, or at least two adjacent R-groups are joined forming C4-C20 ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_z-2) is a heteroatom ligand in which J is an element with a coordination number of three from Group V A or an element with a coordination number of two from Group VI A of the Periodic Table of Elements, and each R' is, independently a radical selected from a group consisting of C₁-C₂₀ hydrocarbyl radicals, substituted C₁-C₂₀ hydrocarbyl radicals where one or more hydrogen atom is replaced by a halogen radical, an amido radical, a phosphido radical, and alkoxy radical and any other radicals containing a Lewis acidic or basic functionality, and "z" is the coordination number of the element J;

each Q is, independently, any univalent anionic ligand, such as a halide, hydride, or a substituted or unsubstituted C₁-C₂₀ hydrocarbyl, alkoxide, aryloxide, amide, arylamide, phosphide or arylphosphide, or both Q together are an alkylidene, or a cyclometallated hydrocarbyl or any divalent anionic chelating ligand;

T is a covalent bridging group containing a Group IV A or V A element; and

L is a neutral Lewis base where "w" denotes a number from 0 to 3.

28. (currently amended) The composition of claim ~~45~~ 27 where T is Si(R¹)(R²), and wherein R¹ and R² are, independently, a C₁ to C₂₀ hydrocarbyl radicals, substituted C₁ to C₂₀ hydrocarbyl radicals wherein one or more hydrogen atom is replaced by a halogen atom; R¹ and R² may also be joined forming a C₃ to C₂₀ ring.
29. (currently amended) The compound of claim ~~1~~ 27 wherein J is nitrogen.
30. (currently amended) The compound of claim ~~1~~ 27 wherein R is a C₁ to C₂₀ hydrocarbyl radical and R' is a C₆-C₂₀ C₁₁-C₂₀ cyclohydrocarbyl radical or an aromatic radical.
31. (currently amended) The compound of claim ~~1~~ 27 wherein R' is an alkyl radical or cyclic radical.

32. (currently amended) The compound of claim 27 wherein (C₅H₄XR₂) is dimethylsilyl(tetramethylecyclopentadienyl)(t butylamide) titanium dichloride, dimethylsilyl(3,4 di t butylecyclopentadienyl)(cyclododecylamide) titanium dichloride, or dimethylsilyl(2,5 dimethylecyclopentadienyl) cyclododecylamide titanium dichloride, J-R'_(2,2) is cyclododecylamido.